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Using the FMEA Tool to Identify Potential Failures in a Psychiatric Hospital Emergency Department During COVID-19

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Introduction

FMEA - Failure mode and effects analysis is a tool to identify failures and their cause and effect, including set actions to implement before problems occur

COVID-19 pandemic created medical challenges as depression, anxiety, anger and violence, leading to higher use of healthcare services especially in emergency departments

Results

The ED admission process involves 6 stages

1. Telephone consultation
2. Patient arrives to entrance
3. Passage from gate to ER
4. Nurse triage
5. Waiting for back up
6. Therapist examination

This stage includes 32 potential failures, may lead to 21 physical hazards

Objective

Identify failure modes and potential causes in treating patients visiting **a psychiatric hospital emergency department**

Method

- Multidisciplinary team (psychiatrists, nurses, psychologists and para-medical personnel) in the ED of a 150-bed psychiatric hospital
- The team was trained in **FMEA** and basic **COVID-19** information.
- The team identified possible causes of failures and their potential effects, to calculate a risk priority number (RPN) for each failure, and plan changes in practice

Major potential failures at admission to the ED

Stage	Potential failure	RPN
Telephone consultation	Danger or suicide risk not detected	225
Patient arrival to hospital entrance	Violent patient refuses to enter the hospital area	120
	Not detecting a conceal weapon on a patient	169
Passage from gate to ER	Patient wanders in hospital and enters restricted areas	151
	Violent or dangerous event	189
Nurse Triage	Potential suicidal or earlier attempts not detected	121

Influence of Covid-19

Psychiatrists, especially senior staff, believe nurses are more likely to miss a COVID-19 diagnosis than psychiatrists

Differences according to healthcare staff roles

Analyses according to healthcare staff roles found 5 types of significant failures, compared to only 2 when comparing ER vs. non-ER staff

RPN grades as a function of ER and non-ER caregivers

ER and non-ER care providers differed in only 2/32 failure analyses (P<0.001)

ED healthcare providers considered failure to identify patient arriving with a concealed weapon, as **more** dangerous then non-ER providers (RPN=224, 137 respectively)

ED healthcare providers considered failure to identify suicide potential at triage, as **less** dangerous, than non-ER providers (RPN=102, 132, respectively)

Conclusion

FMEA is a useful tool for anticipating potential failures in the admission process and proposing improvements that could help reduce psychiatric situations during the pandemic

Lessons learned

1. The large sample of 45 participants enable statistical analysis of the RPN
2. Type of training (MD, RN, etc.) affected ability to identify potential failures more than location (ED vs. non-ED)
3. Sample selection is the key to successful FMEA analysis. Therefore, it must include several, diverse specialists